

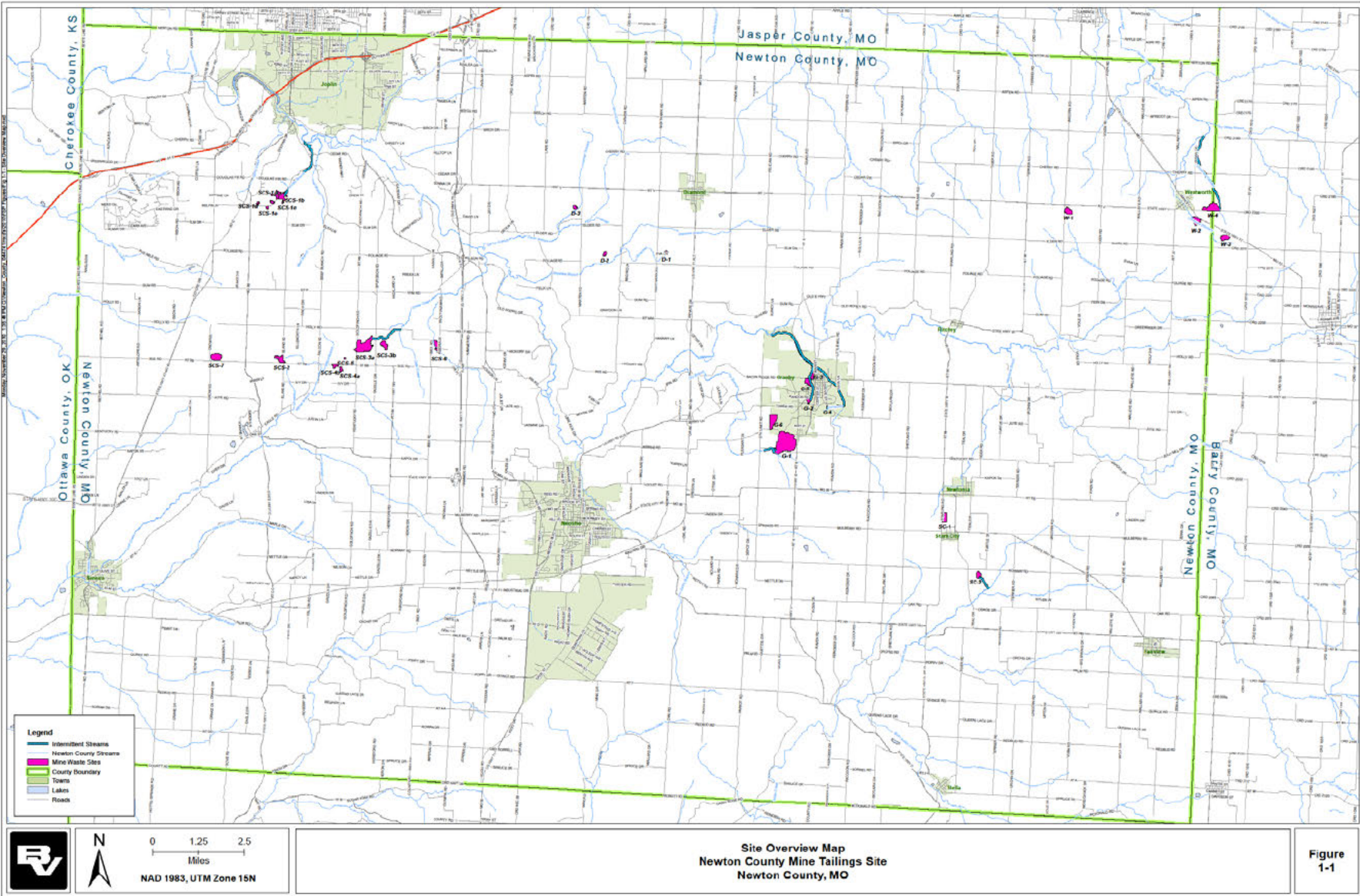
Newton County Mine Tailings Newton County, Missouri

Operable Units 1 and 2

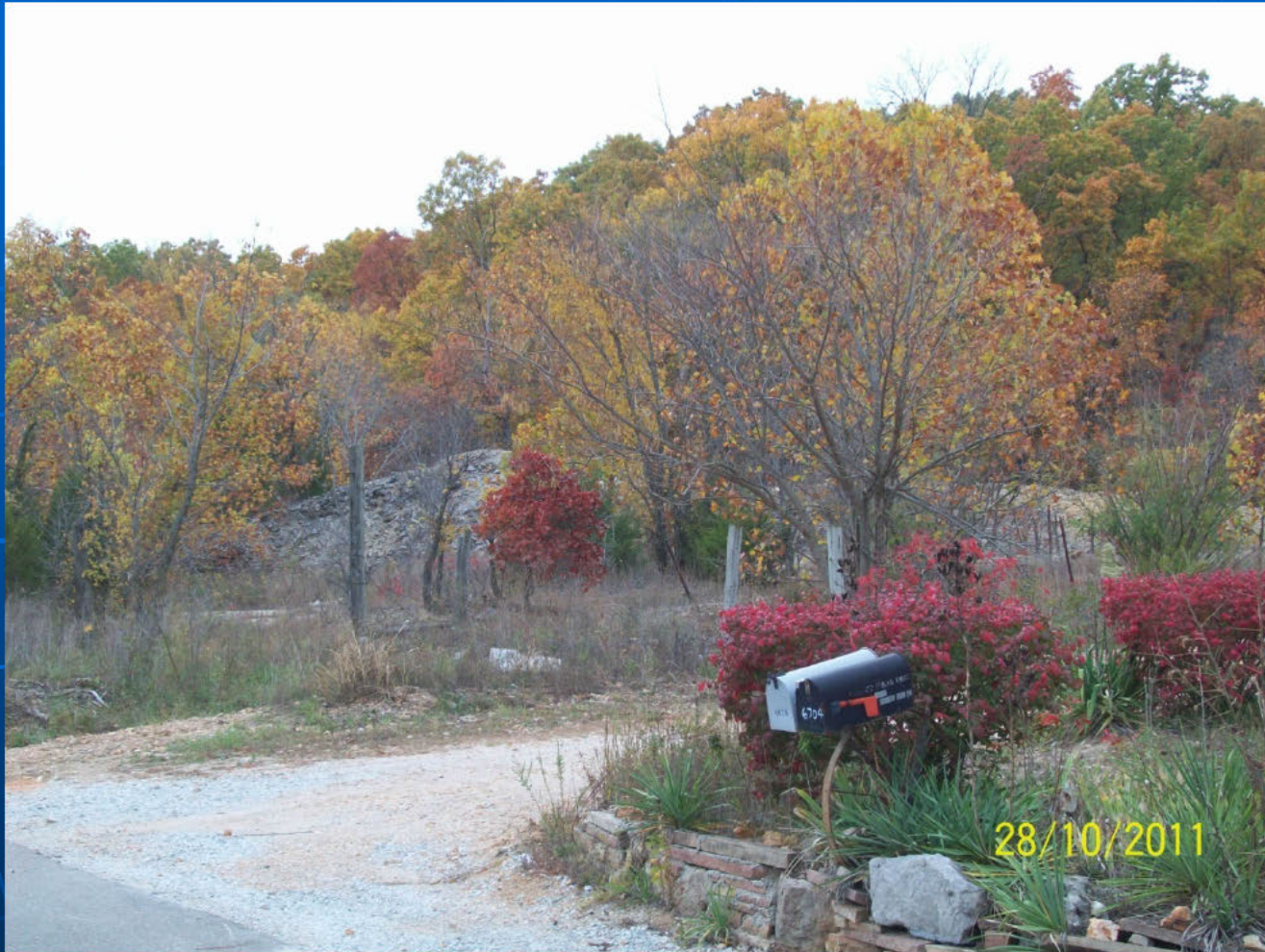
Site Information

- The Newton County Mine Tailings Site is part of the Tri-State Mining District which covers hundreds of square miles in southwestern Missouri, southeastern Kansas and northeastern Oklahoma.
- The primary contaminants of concern are lead, zinc and cadmium contained in several types of waste materials, including mine wastes, mill wastes and smelter-related materials.
- Approximately 2.8 million cubic yards of wastes affect about 260 acres.
- The Site has been managed as two operable units with OU1 work conducted by a combination of EPA and responsible parties, and this work has completed. The OU2 is a fund-lead remediation and the subject for the Panel.
- Settlements with responsible parties have been placed into a special account. \$3.3 million of special account funds have been used to implement a drinking water removal action and the RD. Approximately \$14.2 million remains in the special account for implementation of the remedy.

Location



Chat Piles Surrounding Home's Entry



Home Built on Chat Pile Hill



Chat Piles Surrounding that Home



Chat Pile in Trees behind Home



Close-up of Chat Pile in Trees



Drainage off Chat Piles into Stream System



Response Action and Costs

- Seventeen (17) areas have been designated for remedial actions in Newton County. For each of the designated areas, excavation of mining wastes, contaminated soils and contaminated sediments will occur, followed by re-contouring and re-vegetation. The materials will be transported to the central repository in Granby. The Granby central repository will be capped with an 18-inch soil cover. Monitoring of streams and implementation of future -use ICs will complete the action for all designated areas.
- The ongoing drinking water activities will be completed before the completion of the OU2 remedy. Thus, completion of the OU2 remedy will achieve the construction completion accomplishment for this Site.
- The total cost estimate for the OU2 remedy is \$19,500,000, including \$19,300,000 for construction costs and 30 years of O&M totaling \$200,000. Funding available in the special account will be \$14.2 million, **Exemption 5: DP**
[REDACTED]
[REDACTED] No O&M funding is required since groundwater was addressed in the removal action.

Exemption 5: DP

[REDACTED]

Readiness

Date State Superfund Contract or State Cooperative Agreement will be signed (Month)?

Estimated in January 2012

If Non-Time Critical, is State cost sharing (provide details)?

N/A

If Remedial Action, when will Remedial Design be 95% complete?

Final will be approved by 12/2011.

When will Region be able to obligate money to the site?

January or February 2012 for Special Account funds

December 2012 for fund-lead funds

Estimate when on-site construction activities will begin:

March 2012

Has CERCLIS been updated to consistently reflect project cost/readiness information?

Yes

Risks to Human Populations Exposed

Describe the exposure scenario(s) driving the risk and remedy. Include risk and exposure information on current/future use, on-site/off-site, media, exposure route, and receptors:

Human exposures to lead were assessed separately from cadmium and zinc, through the use of the Integrated Exposure Uptake Biokinetic Model (IEUBK). The risk assessment identified potential noncancer health risks for children and adults who live on and near mill wastes, particularly those who also consume home grown garden produce. Human exposure to cadmium and lead in soils, mill wastes, and garden produce accounted for most of the numeric calculated health risk.

Estimate the number of people reasonably anticipated to be exposed in the absence of any future EPA action for each medium for the following time frames:

<u>MEDIUM</u>	<u><2yrs</u>	<u><10yrs</u>	<u>>10yrs</u>
Soils/Waste Materials	100 – 200	100 – 200	100 - 200
Drinking Water	0 = Due to removal	0	0
Surface water	0 = Ecological risk	0	0
Sediment	0 = Ecological risk	0	0

Discuss the likelihood that the above exposures will occur:

Exposures are residential near former mining sites. Sites are not restricted for access. Future land-use is not expected to change.

Other Risk/Exposure Information?

Primary human exposures are people living on and recreating on former mining sites, notably children.

Site and Contaminant Stability

Describe the means/likelihood that contamination could impact other areas/media given current containment:

Waste materials were disposed decades ago and are currently uncontrolled and incurring normal erosion processes which release contaminants. Contaminants migrate via groundwater and surface water onto uncontaminated soils, into surface water systems and into drinking water supplies.

Are the contaminants contained in engineered structure(s) that currently prevents migration of contaminants? Is this structure sound and likely to maintain its integrity?

No

Are the contaminants in a physical form that limits the potential to migrate from the site? Is this physical condition reversible or permanent?

No

Are there institutional physical controls that currently prevent exposure to contamination? How reliable is it estimated to be?

No

Contaminant Characteristics

<u>Contaminant</u>	<u>*Media</u>	<u>**Concentrations</u>
Lead	SL, ST, GW, SW	IUBK model used is not concentration-based. Avg Concentration/Max concentration was 1,000/10,000 ppm in soils
Zinc	SL, ST, GW, SW	Avg/Max Concentration = 10,000/133,000 ppm
Cadmium	SL, ST, GW, SW	Avg/Max Concentration = 50/412 ppm

Describe the characteristics of the contaminant with regards to its inherent toxicity and the significance of the concentrations and amount of the contaminant to site risk.

(Please include the clean up level of the contaminants discussed.)

Lead affects the central nervous system and children less than age 7 years are susceptible to lead contamination.

Zinc is toxic to aquatic ecosystem.

Cadmium is a long-term toxin which damages liver and kidney functions.

Describe any additional information on contaminant concentrations which could provide a better context for the distribution, amount, and/or extent of site contamination. *(e.g. frequency of detection/outlier concentrations, exposure point concentrations, maximum or average concentration values, etc.....)*

Lead = approx. 70% of samples exceeded 400 ppm residential cleanup criteria

Zinc = approx. 50% of samples exceeded 6400 ppm cleanup criteria

Cadmium = approx. 30% of samples exceeded 40 ppm cleanup criteria

Threats to the Environment

Describe any observed or predicted adverse impacts on ecological receptors including their ecological significance, the likelihood of impacts occurring, and the estimated size of impacted area:

Concentrations of cadmium, lead, and zinc in stream sediment exceed sediment toxicity criteria. In addition, cadmium and zinc surface water concentrations in some streams exceed aquatic vegetation toxicity values, and cadmium and zinc sediment concentrations in some stream segments exceed sediment toxicity benchmarks for fish.

Comparisons to phytotoxicity reference values indicate that most mine-impacted soils contain COCs at concentrations that could be expected to adversely affect plant growth. Comparisons to conservative earthworm and other soil invertebrate toxicity benchmarks in the evaluation indicated that mining-related soils contain COCs at concentrations that could be expected to adversely affect earthworm and other soil invertebrate populations.

Comparisons to the feeding guild specific screening levels in the evaluation indicated that mining-related soils contain COCs at concentrations that could be expected to adversely affect populations of terrestrial vertebrates within all feeding guilds examined. The highest risk to adverse effects appears to be associated with terrestrial vertebrates that consume earthworms (i.e., avian and mammalian vermivores) in soils with elevated COC concentrations.

Would natural recovery occur if no action was taken?

Yes X No

If yes, estimate how long this would take.

Not Applicable

Programmatic Considerations

Describe the degree to which the community accepts the response action.

During the public comment period for the 2010 Proposed Plan, very favorable comments were received from the public, the state and the Environmental Task Force, which is a citizen-based oversight group.

Describe the degree to which the State accepts the response action.

Supportive

Describe other programmatic considerations, e.g.; natural resource damage claim pending, Brownfields site, use of innovative technology, construction completion, economic redevelopment, environmental justice, etc...

The primary point to emphasize is that funding of the OU2 remedy will achieve a construction completion for this Site. Contamination of the watershed system in Newton County will remain after implementation of the OU2 remedy, but the investigation and cleanup of the Newton County watershed system will be part of a larger watershed study/cleanup, including Jasper County. This larger study/cleanup is part of the Jasper County cleanup.